AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-65. (Canceled)

66. (Currently Amended) A signal measurement system comprising:

a pulse management system configured to:

~~automatically~~ generate at least one pulse measurement of a particular pulse measurement type for each of a plurality of pulses in a time-varying analog signal stored in an acquisition memory;

~~generate~~ calculate at least one measurement statistic for the particular pulse measurement type, wherein the at least one measurement statistic is ~~generated~~ calculated using the generated pulse measurements of the particular pulse measurement type for at least ~~some~~ two of the plurality of pulses; and

store the generated pulse measurements ~~results~~ and the at least one measurement statistic ~~statistics in a searchable data structure~~.

67. (New) The signal measurement system of claim 66, wherein the signal measurement system comprises an oscilloscope.

68. (New) The signal measurement system of claim 66, wherein at least one of the measurement statistics comprise one or more of the group consisting of:

mean, mode, median, and standard deviation.

69. (New) The signal measurement system of claim 66, wherein the pulse measurements comprise one or more of the group consisting of rise time; fall time; pulse width; preshoot; pulse area; minimum voltage; maximum voltage; average voltage; volts AC RMS; volts DC RMS; amplitude voltage; base voltage; top voltage; upper voltage; middle voltage; lower voltage; plus width; minus width; positive duty cycle; negative duty cycle; period; phase; frequency; delta time; peak-to-peak voltage; and overshoot.

70. (New) The signal measurement system of claim 66, wherein the pulse management system further comprises:

a histogrammer configured to sample the analog signal to generate at least one histogram, the histogram comprising a distribution of a number of occurrences that the analog signal attained each of a plurality of signal levels; and

a mode finder configured to identify one or more modes of the histogram representing one or more signal levels that occur most frequently in the histogram.

71. (New) The signal measurement system of claim 70, wherein the pulse management system further comprises:

a transition calculator configured to determine a transition signal level at each of one or more transition percentages, wherein each of the one or more transition percentages is a percentage of a difference between two of the signal levels.

72. (New) The signal measurement system of claim 71, wherein the pulse management system further comprises:

a data analyzer configured to process the pulse measurements to determine transition times at which each of the plurality of pulses attains each of the transition signal levels.

73. (New) The signal measurement system of claim 72, wherein the pulse management system further comprises:

a pulse measurement engine configured to generate the at least one pulse measurement of the particular pulse measurement type for each of a plurality of pulses utilizing the transition times and an indication of a type of pulse.

74. (New) The signal measurement system of claim 70, wherein the histogram comprises a table stored in memory that lists a quantity of sampled occurrences the analog signal attained each of the plurality of signal levels.

75. (New) The signal measurement system of claim 74, wherein the analog signal is a voltage signal, and wherein the signal levels represented in the histogram are voltage levels.

76. (New) The signal measurement system of claim 70, wherein the acquisition memory stores data pertaining to a plurality of analog signals;

wherein the pulse measurement statistics are calculated in accordance with measurement parameters; and

wherein the measurement parameters include a source indication that indicates which of the plurality of analog signals is to be processed by the histogrammer.

77. (New) The signal measurement system of claim 70, wherein the mode finder utilizes an indication to identify a number of modes of the histogram, and wherein the indication is an indication of the number of signal levels of the acquired signals which have a logical representation.

78. (New) The signal measurement system of claim 70, wherein the analog signal is an alternate mark inversion communication signal that transitions between three signal values, and wherein the mode finder identifies three modes in the histogram.

79. (New) The signal measurement system of claim 70, wherein the mode finder implements a smoothing function to identify any of the one or more modes of the histogram that is not well defined.

80. (New) The signal measurement system of claim 66, wherein the pulse measurement statistics are generated in accordance with at least one measurement parameter provided by an operator.

81. (New) A method comprising:

generating at least one pulse measurement of a particular pulse measurement type for each of a plurality of pulses in a time-varying analog signal stored in an acquisition memory;

calculating at least one measurement statistic for the particular pulse measurement type, wherein the at least one measurement statistic is calculated using the generated pulse measurements of the particular pulse measurement type for at least two of the plurality of pulses; and

storing the generated pulse measurements and the at least one measurement statistic.

82. (New) The method of claim 81, further comprising:

receiving the time-varying analog signal; and

displaying a waveform of at least one pulse of the time-varying analog signal.

83. (New) The method of claim 81, wherein at least one of the measurement statistics comprises one or more of the group consisting of:

mean, mode, median, and standard deviation.

84. (New) The method of claim 81, wherein the pulse measurements comprise one or more of the group consisting of rise time; fall time; pulse width; preshoot; pulse area; minimum voltage; maximum voltage; average voltage; volts AC RMS; volts DC RMS; amplitude voltage; base voltage; top voltage; upper voltage; middle voltage; lower voltage; plus width; minus width; positive duty cycle; negative duty cycle; period; phase; frequency; delta time; peak-to-peak voltage; and overshoot.

85. (New) The method of claim 81, further comprising:

sampling the analog signal to generate at least one histogram, the histogram comprising a distribution of a number of occurrences that the analog signal attained each of a plurality of signal levels; and

identifying one or more modes of the histogram representing one or more signal levels that occur most frequently in the histogram.

86. (New) The method of claim 85, further comprising:

determining a transition signal level at each of one or more transition percentages, wherein each of the one or more transition percentages is a percentage of a difference between two of the signal levels.

87. (New) The method of claim 86, further comprising:

processing the pulse measurements to determine transition times at which each of the plurality of pulses attains each of the transition signal levels.

88. (New) The method of claim 87, wherein generating at least one pulse measurement comprises generating the at lease one pulse measurement utilizing the transition times and an indication of a type of pulse.

89. (New) The method of claim 85, wherein the histogram comprises a table stored in memory that lists a quantity of sampled occurrences the analog signal attained each of the plurality of signal levels.

90. (New) The method of claim 89, wherein the analog signal is a voltage signal, and wherein the signal levels represented in the histogram are voltage levels.

91. (New) The method of claim 85, wherein the acquisition memory stores data pertaining to a plurality of analog signals;

wherein the pulse measurement statistics are calculated in accordance with measurement parameters; and

wherein the measurement parameters include a source indication that indicates which of the plurality of analog signals is to be processed when sampling the analog signal to generate the at least one histogram.

92. (New) The method of claim 85, wherein identifying one or more modes of the histogram includes utilizing an indication to identify a number of modes of the histogram, and wherein the indication is an indication of the number of signal levels of the acquired signals which have a logical representation

93. (New) The method of claim 85, wherein the analog signal is an alternate mark inversion communication signal that transitions between three signal values, and wherein identifying one or more modes of the histogram includes identifying three modes in the histogram.

94. (New) The method of claim 85, wherein identifying one or more modes of the histogram includes using a smoothing function to identify any of the one or more modes of the histogram that is not well defined.

95. (New) The method of claim 81, further comprising:

receiving at least one measurement parameter from an operator, and wherein generating at least one pulse measurement includes generating the at least one pulse measurement in accordance with the at least one measurement parameter.

96. (New) A system comprising:

means for generating at least one pulse measurement of a particular pulse measurement type for each of a plurality of pulses in a time-varying analog signal stored in an acquisition memory;

means for calculating at least one measurement statistic for the particular pulse measurement type, wherein the at least one measurement statistic is calculated using the generated pulse measurements of the particular pulse measurement type for at least two of the plurality of pulses; and

means for storing the generated pulse measurements and the at least one measurement statistic.

97. (New) The system of claim 96, further comprising:

means for receiving the time-varying analog signal; and

means for displaying a waveform of at least one pulse of the time-varying analog signal.

98. (New) The system of claim 96, wherein at least one of the measurement statistics comprises one or more of the group consisting of:

mean, mode, median, and standard deviation.

99. (New) The system of claim 96, wherein the pulse measurements comprise one or more of the group consisting of rise time; fall time; pulse width; preshoot; pulse area; minimum voltage; maximum voltage; average voltage; volts AC RMS; volts DC RMS; amplitude voltage; base voltage; top voltage; upper voltage; middle voltage; lower voltage; plus width; minus width; positive duty cycle; negative duty cycle; period; phase; frequency; delta time; peak-to-peak voltage; and overshoot.

100. (New) The system of claim 96, further comprising:

means for sampling the analog signal to generate at least one histogram, the histogram comprising a distribution of a number of occurrences that the analog signal attained each of a plurality of signal levels; and

means for identifying one or more modes of the histogram representing one or more signal levels that occur most frequently in the histogram.

101. (New) The system of claim 100, further comprising:

means for determining a transition signal level at each of one or more transition percentages, wherein each of the one or more transition percentages is a percentage of a difference between two of the signal levels.

102. (New) The system of claim 101, further comprising:

means for processing the pulse measurements to determine transition times at which each of the plurality of pulses attains each of the transition signal levels.

103. (New) The system of claim 102, wherein the means for generating at least one pulse measurement comprises means for generating the at lease one pulse measurement utilizing the transition times and an indication of a type of pulse.